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ABSTRACT

This report summarizes sponsored research revenues at Alberta Universities. Sponsored research revenues are those that are received outside of regular university operating grant and include both research grants and research contracts. Research at Alberta universities is supported in part by the provincial government through a number of programs. However, sponsored research funding to Alberta universities has more than doubles over the past 5 years to $437.5 million (Canadian) in 2001-2002. This large increase represents both the introduction of new programs and expansion of existing programs at both federal and provincial levels and the increased capacity and capability of Alberta universities. At the same time, the provincial government has more than tripled its funding for university research. The level of sponsored research funding provided to universities by nongovernmental sources, primarily industry and nonprofit organizations, fell from $106.8 million in 2000-2001 to $104.9 million in 2001-2002. The distribution of total sponsored research funding from all sources follows a fairly consistent historical pattern, with the largest proportion of funding going towards the faculties of medicine, science, and engineering at both the Universities of Alberta and Calgary. It should be noted that although funding amounts vary by discipline, the intensity of research in faculties is not necessarily commensurate with monetary allocations to faculties. Support and administration also take up a significant portion of the sponsored research revenues. The report describes some individual research programs in greater detail. (SLD)

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RESEARCH FUNDING AT ALBERTA UNIVERSITIES

2001/2002 REPORT

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November 2002

UNIVERSITY RESEARCH AND STRATEGIC INVESTMENTS BRANCH

Alberta
INNOVATION AND SCIENCE

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TABLE OF CONTENTS

- Introduction – University Research in Alberta 1
- Provincial Government Support of University Research 2-3
- Executive Summary of Statistics 4
- Total Sponsored Research Revenue to Alberta Universities (1991/92 to 2001/02) 5
  Figure 1
- Total Sponsored Research Revenue by Source (1997/98 to 2001/02) 6
  Figure 2A and 2B
- Non-Governmental Support for Sponsored Research (1997/98 to 2001/02) 7
  Figure 3
- Sponsored Research Revenue at Individual Universities (1997/98 to 2001/02) 8
  Figure 4A and 4B
- Sponsored Research Revenue at Individual Universities by Source (2001/02) 9
  Figure 5
- Distribution of Sponsored Research Revenue within Alberta Universities (2001/02) 10
  Figure 6
- Alberta Heritage Foundation for Medical Research (AHFMR) (1997/98 to 2001/02) 11
  Figure 7
- Commercialization of Research (2001/02) 12
- Research Revenue from Investment Earnings, Networks of Centres of Excellence and Clinical Trials (2001/02) 13-14
- Sponsored Research Revenue (1999/00 to 2001/02) 15
  Table 1
- Alberta Science and Research Investments Program (2001/02) 16
  Table 2

Introduction
University Research in Alberta

Research conducted at Alberta's universities:

- creates new knowledge that adds to the existing body of understanding;
- disseminates knowledge to inform and enhance learning;
- contributes to the training of highly qualified personnel, including the next generation of university researchers as well as knowledge workers for industry; and
- contributes to the social, cultural and economic well-being of the province and of individual Albertans.

Technology and the economy are changing at a rapid pace. As such, innovation has become a central component to sustaining Alberta's economic competitiveness and acquiring and retaining a high quality of life for Albertans.

University research plays a vital role in the innovation process. Research conducted in Alberta's universities contributes to the search for innovative discoveries that have the potential for far-reaching economic and social implications. Through the university educational experience, research also contributes to the development of people with scientific knowledge and problem-solving skills that can be applied throughout society and a wide range of industries. A key output of a university is its graduates because of the skills and knowledge that they possess.

The cumulative research successes of a university, coupled with the building of an institution's infrastructure, are key determinants in attracting future resources. These resources come in the form of people (quality faculty and students) and financial support. These resources in turn improve the quality of both the institution's research and educational programs.

This report summarizes sponsored research revenues at Alberta Universities. Sponsored research revenues are those that are received outside of the regular university operating grant and include both research grants and research contracts.

Financial Note: The data in this report is provided directly by the universities and is derived from audited financial schedules.

Provincial Government Support of University Research

Research at Alberta universities is supported in part by the provincial government through Alberta Innovation and Science, the Alberta Science and Research Authority (ASRA), Alberta Learning and Alberta Infrastructure, as well as through the Alberta Heritage Foundation for Medical Research and the newly established Alberta Ingenuity Fund (Alberta Heritage Foundation for Science and Engineering Research).

Research funding provided by Innovation and Science and ASRA programs does not generally support specific research projects; instead the majority of these programs fund widely-applicable university research infrastructure which helps to build the capacity and capability required to support a broad range of research activities. However, there is a clear link between funding general infrastructure and attracting additional external funding for research activities (i.e., as better infrastructure is put in place, the potential to attract funding for research activities increases). Alberta Infrastructure provides funds for the large capital buildings and related capital infrastructure required for the university research system.

Operating Grant
Alberta Learning provides an operating grant to the universities, which includes funding for teaching, research and administrative activities. It is estimated that up to 40 percent of the operating grant goes directly or indirectly towards supporting research activities. The 2001/02 university operating grant totaled $463,930,519.

Performance Envelope
The research component of Alberta Learning's Performance Envelope provides additional funding based on the extent to which Alberta universities meet agreed upon research targets. These targets are a subset of the department's Key Performance Indicators (KPIs) which are specifically dedicated to research. In 2001/02, Alberta Universities received $5,039,572 from the Performance Envelope, a portion of this is related to the research component.

Alberta Science and Research Investments Program (ASRIP)
The Alberta Science and Research Investments Program (ASRIP) is a competitive funding program that supports selected science and research initiatives of strategic importance to Alberta. ASRIP is available for science and research initiatives under three distinct funding streams: Research Infrastructure, Enabling Research Application and Technology Transfer and Science Awareness and Promotion. The 2001/02 ASRIP competition allocated funding in 2 phases: Phase 1 was in 2001/02 and Phase 2 was in 2002/03. In the first phase of the competition, $4.1 million was allocated to new infrastructure for Alberta's science community. Funding received from this program is reported on a modified cash flow basis in that funds cannot be reported until all partner funding is secured. Table 2 provides a complete listing of proposals approved under Phase 1 of the 2001/02 competition.

Research Excellence Envelope (REE)
The Research Excellence Envelope (REE) was designed to help universities remain competitive by providing funds to help attract and retain researchers. In 2001/02, REE provided $3.5 million to Alberta universities: $1.9 million to the University of Alberta, $1.3 million to the University of Calgary, $210,000 to the University of Lethbridge and $55,010 to Athabasca University. REE funds complemented contributions from the universities and their partners towards the total start-up and development costs of key faculty. Funds were used to purchase or upgrade equipment, adapt laboratory or other space and to help with other costs, such as travel related to research, expensive supplies and support for graduate students or associates involved in the research programs of the targeted researcher.

Core University Research in Sustainable Energy (COURSE)
The Alberta Energy Research Institute (AERI) invests in research primarily through the Core University Research in Sustainable Energy (COURSE) program. The COURSE program, formerly known as Coordination of University Research for Synergy and Effectiveness, provides a link between the energy industry and universities to ensure that basic research in strategic areas is funded. In 2002, COURSE funded eight projects at the University of Alberta for $1,520,036 and nine projects at the University of Calgary for $1,227,897.

Farming for the Future
Through the competitive Farming for the Future Research Grants Program, in 2001/02 the Alberta Agricultural Research Institute (AARI) provided $3.1 million to fund research projects at three Alberta universities. The funding was in the strategic priority areas of agri-health, basic research (in genomics, proteomics, and bioinformatics), environmental sustainability, food production and value-added processing. The University of Alberta received $2.9 million for 46 projects, the University of Calgary received $77,000 for three projects and the University of Lethbridge received $100,000 for one project. The AARI investment leveraged at least the same amount from the private sector and/or public funding sources.

Alberta Informatics Circle of Research Excellence (iCORE)
The mandate of the Alberta Informatics Circle of Research Excellence (iCORE) is to attract and grow a critical mass of outstanding researchers in the fields of computer science, computer engineering, physics, mathematics and other Information and Communication Technology-related disciplines. Building on existing excellence and strengths in Alberta's universities, iCORE forms and supports strong scientific teams in ICT. In 2001/02 iCORE provided $4 million in support of ten researchers and 86 graduate students. Source: iCORE Inc 2001-2002 Annual Report, Statement of Operations.

Alberta Heritage Foundation for Medical Research (AHFMR)
Established by the Government of Alberta in 1980, the Alberta Heritage Foundation for Medical Research (AHFMR) supports biomedical and health research at Alberta universities, affiliated institutions, and other medical and technology-related institutions. The AHFMR's support and leadership has resulted in millions of dollars of support to Alberta universities and research hospitals and has enabled Alberta to become one of the top ten medical research centres in North America.

Alberta Ingenuity Fund (Alberta Heritage Foundation for Science and Engineering Research)
Modeled after the Alberta Heritage Foundation for Medical Research, the Alberta Ingenuity Fund was established in 2000 with an endowment fund of $500 million to support a balanced, long-term program of science and engineering research in Alberta.

Executive Summary of Statistics

Sponsored research funding to Alberta universities has more than doubled over the past five years to $437.5 million in 2001/02. This large increase in funding reflects both:

1. The introduction of new programs and expansion of existing programs, at both the federal and provincial levels, aimed at strategically investing in university research.
2. Increased capacity and capabilities at Alberta universities.

The provincial government has more than tripled its funding for university research over the past five years to $126.3 million, a firm indication of its commitment towards science and innovation.

Federal government funding to Alberta universities has more than doubled over the last five-year period to $190.2 million in 2001/02. From 2000/01 to 2001/02 funding from the Federal government saw an increase of 44 percent - the largest increase of all sources. This is primarily the result of new programs such as the Canada Foundation for Innovation and the Canada Research Chairs and expanded budgets for the federal granting councils (the Natural Sciences and Engineering Research Council, the Social Sciences and Humanities Research Council and the Canadian Institutes for Health Research).

The level of sponsored research funding provided to universities by non-governmental sources, primarily industry and non-profit organizations fell from $106.8 million in 2000/2001 to $104.9 million in 2001/02.

Other indicators of the impacts of university research on industry are the application and transferability of research to industry. In 2001/02, with the help of the Industry Liaison Office at the University of Alberta and University Technologies International Inc. at the University of Calgary, 148 new inventions were disclosed, 293 patents were filed, 309 new agreements were executed and 14 start up companies were formed.

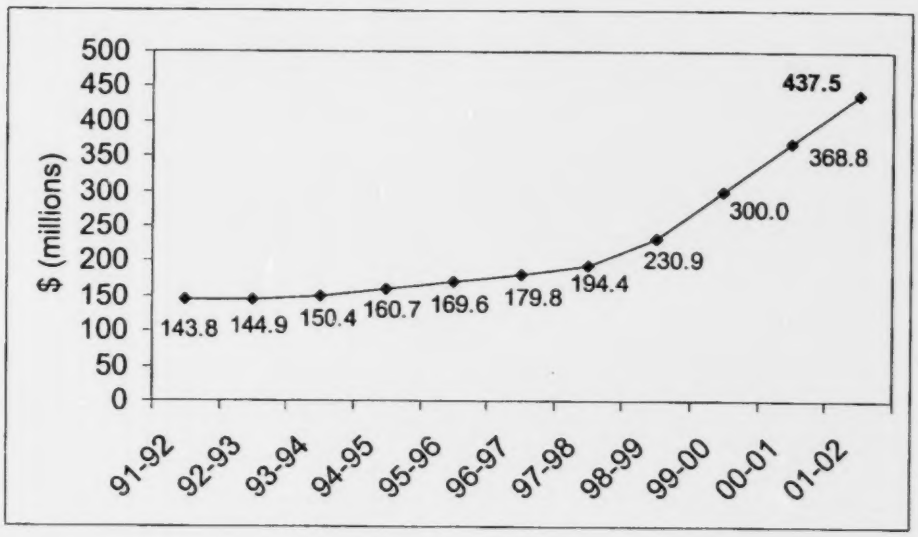
The distribution of total sponsored research funding from all sources follows a fairly consistent historical pattern, with the largest proportion of funding going towards the faculties of medicine, science, and engineering at both the Universities of Alberta and Calgary. However, it should be noted that although funding amounts vary by discipline, the intensity of research in faculties is not necessarily commensurate with monetary allocations to faculties. Support and administration costs also take up a significant portion of the sponsored research revenues.

The Alberta Heritage Foundation for Medical Research has awarded $194 million over the past five years to Alberta's medical faculties and teaching hospitals, which has enabled Alberta to become one of the top ten medical research centres in North America.

Funds received from the Alberta Ingenuity Fund, which was created in 2000, are listed in this report for the first time with $177,000 provided to the University of Alberta and $99,000 provided to the University of Calgary.

Total Sponsored Research Revenue to Alberta Universities 1991/92 to 2001/02

FIGURE 1



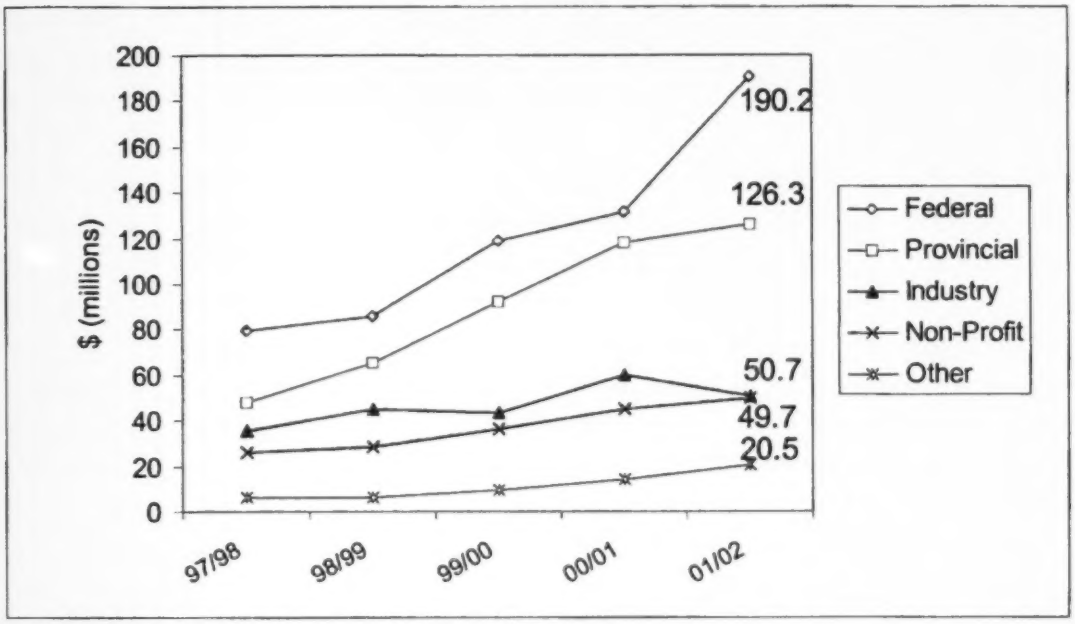
Sources: University of Alberta: Research Grants Office; the University of Calgary: Financial Services; The University of Lethbridge: Financial Services; Athabasca University: Office of the Vice-President, Academic.

- In 2001/02 Alberta's four universities received $437.5 million in sponsored research funding, a 19 percent increase from the previous year.
- Over the past five years, sponsored research funding has more than doubled with an average growth rate of 20 percent per year.
- In the last five years Alberta universities have received over $1.5 billion in sponsored research funding.

Fiscal Year	Amount of Funding	Increase from previous year
2001/02	$437.5 million	18.6%
2000/01	$368.8 million	22.9%
1999/00	$300.0 million	29.9%
1998/99	$230.9 million	18.8%
1997/98	$194.4 million	8.1%

Total Sponsored Research Revenue by Source 1997/98 to 2001/02

FIGURE 2A



* 'Other' includes both other governmental and non-governmental sources.
Sources: University of Alberta: Research Grants Office; the University of Calgary: Financial Services; The University of Lethbridge: Financial Services; Athabasca University: Office of the VP, Academic.

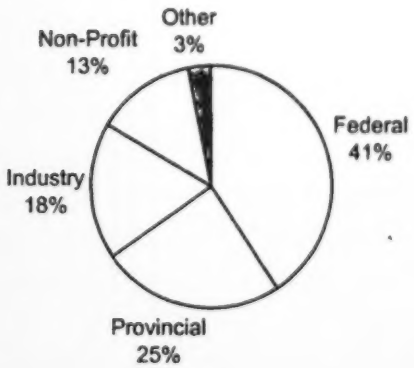
- Funding to universities has been steadily increasing from federal, provincial and non-profit sources over the past five years. Over the long-term, funding from industry has been increasing but is inconsistent on a year-to-year basis.

- Funding from provincial sources has grown from $47.7 million in 1997/98 to $126.3 million in 2001/02. From 2000/01 to 2001/02, federal sources increased by 44 percent. Provincial sources increased by seven percent over the same time.

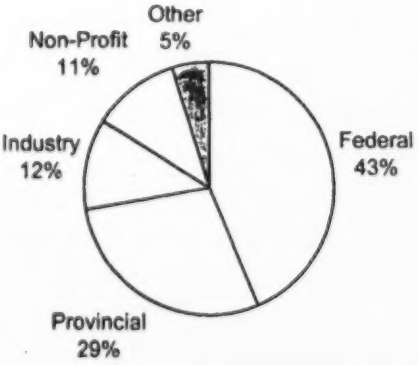
- The following pie charts show how funding from various sources has changed as a percentage of total funding over a five-year period. Funding from provincial sources has increased from 25 percent to 29 percent of total sponsored research funding. Funding from industry has dropped from 18 percent to 12 percent.

FIGURE 2B

1997/98

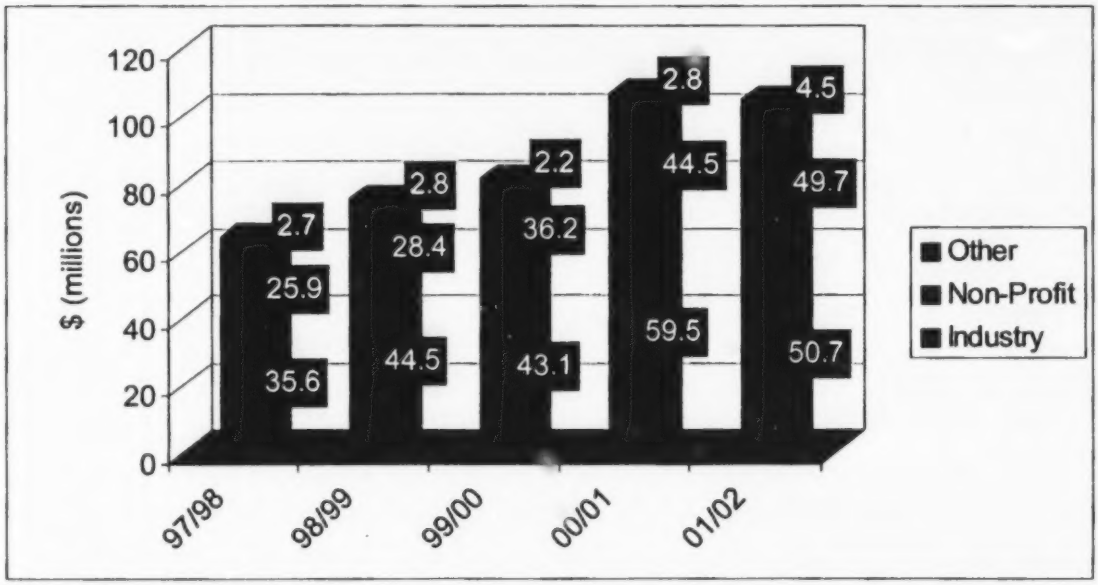


2001/02



Non-Governmental Support for Sponsored Research 1997/98 to 2001/02

FIGURE 3



* 'Other' includes only other non-governmental sources

Sources: University of Alberta: Research Grants Office; the University of Calgary: Financial Services; The University of Lethbridge: Financial Services; Athabasca University: Office of the VP, Academic.

- The total level of funding provided by non-governmental sources to Alberta universities fell from $106.8 million in 2000/01 to $104.9 million in 2001/02.
- In 2001/02 industry investment dropped by 15 percent from the previous year but shows an upward trend since 1997/98 as it increased funding by 42 percent.
- The non-profit sector has consistently increased its sponsored research funding to universities over the past five years to almost double the 1997/98 level. Funding in 2001/02 from this sector increased by 12 percent over the previous year.

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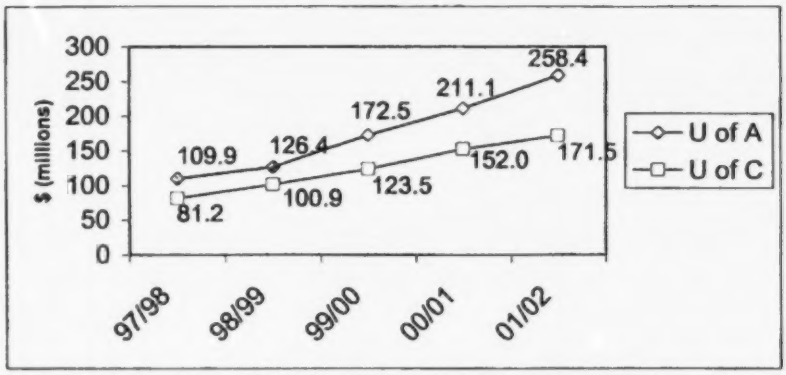
Sponsored Research Revenue at Individual Universities 1997/98 to 2001/02

FIGURE 4A

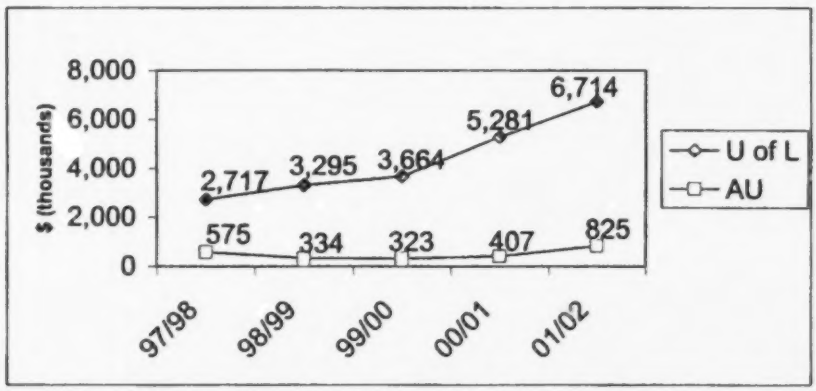


Sources: University of Alberta: Research Grants Office; the University of Calgary: Financial Services.

- In 2001/02 total sponsored research funding to the University of Alberta was $258.4 million, 2.4 times more than in 1997/98 when it received $109.9 million. In one year, 2000/01 to 2001/02, funding increased by 22 percent.

- In 2001/02 total sponsored research funding to the University of Calgary was $171.5 million, more than double the $81.2 million received in 1997/98. In one year, 2000/01 to 2001/02, funding increased by 13 percent.

FIGURE 4B



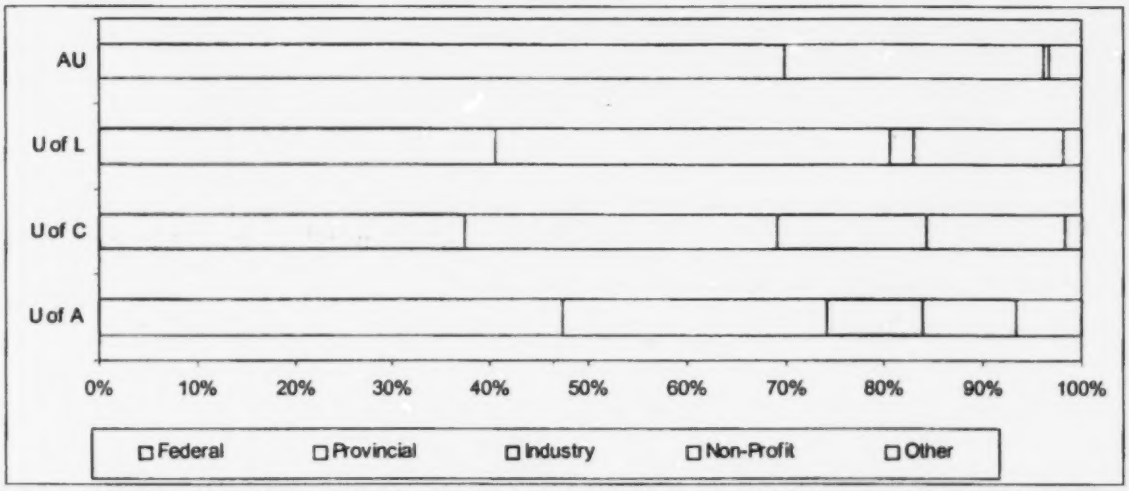
Sources: The University of Lethbridge: Financial Services; Athabasca University: Office of the Vice-President, Academic.

- The University of Lethbridge has been successful in consistently increasing its level of support in recent years. In five years, funding has increased by 2.5 times to $6.7 million in 2001/02 from $2.7 million in 1997/98. Between 2000/01 and 2001/02 funding increased by 27 percent.

- Athabasca University received $825,000 for sponsored research in 2001/02, double the previous year.

Sponsored Research Revenue at Individual Universities by Source 2001/02

FIGURE 5



Sources: University of Alberta: Research Grants Office; the University of Calgary: Financial Services; The University of Lethbridge: Financial Services; Athabasca University: Office of the Vice-President, Academic.

- In 2001/02 the federal government was the largest source of funding to all Alberta universities followed by provincial government sources.

- The University of Alberta received nearly half of its sponsored research funding from federal government sources. Over the past five years, funding from the federal government has grown by about 2.5 times, from $50.6 million in 1997/98 to $122.7 million in 2001/02. Funding from industry has seen a 50 percent increase since 1997/98 but this included a drop of 17 percent between 2000/01 and 2001/02. Since 1997/98 funding from the provincial government has seen the largest jump with funding increasing by 2.7 times, from $26.0 million 1997/98 to $69.0 million in 2001/02.

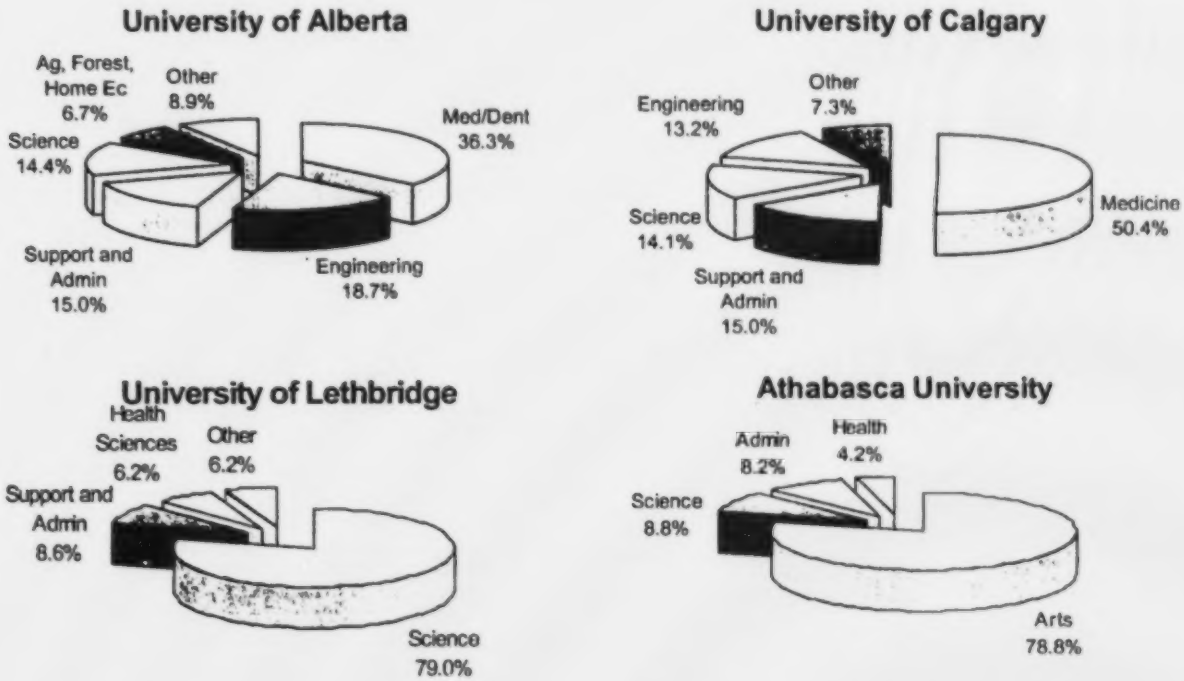
- Funding to the University of Calgary from provincial sources was $54.5 million in 2001/02, an increase of eight percent over the previous year but 2.6 times higher than 1997/98 funding. Federal government funding rose from $46.3 million in 2000/01 to $64.2 million in 2001/02 - an increase of 39 percent. From 1997/98 to 2001/02, the University of Calgary has increased funding received from industry by 35 percent but this included a drop of 13 percent between 2000/01 and 2001/02.

- Funding from provincial sources to the University of Lethbridge in 2001/02 was $2.7 million, 2.8 times higher than in 1997/98. Funding from federal sources has increased 79 percent over the same five-year period. Funding from industry, at $162,000 in 2001/02, is 3.5 times higher than in 2000/01.

- Athabasca University underwent fluctuations in levels of government funding. Such fluctuations in federal and provincial funding levels are expected in smaller universities, due to program cycles and completion and start time of funded research projects. Funding from the federal government, at $576,000 in 2001/02, was four times greater than in 2000/01.

Distribution of Total Sponsored Research Revenue Within Alberta Universities 2001/02

FIGURE 6



Sources: University of Albert a: Research Grants Office; the University of Calgary: Financial Services; The University of Lethbridge: Financial Services; Athabasca University: Office of the VP, Academic

- At the University of Alberta the largest proportion of research funding is secured by the Faculty of Medicine at 36.3 percent. The Faculty of Engineering obtained 18.7 percent of funding in 2001/02 making it the second largest recipient. Historically the Faculty of Science has been the second largest recipient. However, in 2001/02 it moved to fourth spot slightly behind support and administration costs.

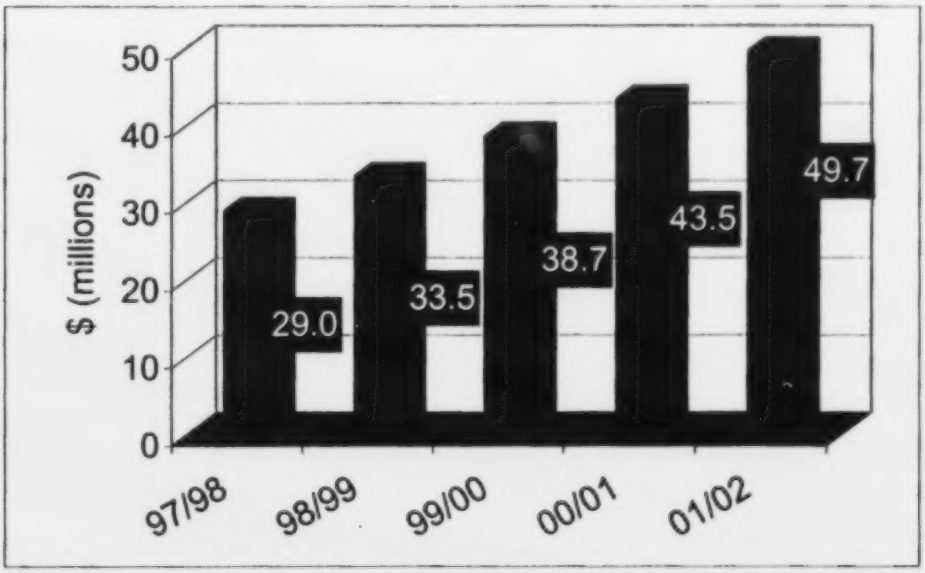
- The University of Calgary's Faculty of Medicine accounted for over 50 percent of 2001/02 sponsored research funding to the university. This is a significant increase from the 2000/01 level of 40 percent.

- The proportional allocation of research funding to faculties at the University of Lethbridge follows a consistent historical pattern, the greatest share of funding being secured by the Faculty of Science at 79 percent in 2001/02. Athabasca University is also consistent with the majority of sponsored research revenue, 78.8 percent, secured by the Faculty of Arts.

Note: Funding amounts vary by discipline, but the intensity of research in faculties is not necessarily commensurate with monetary allocations to faculties. For example, research activities in the Arts, Humanities and Social Sciences tend to be less costly to conduct; therefore, the intensity of such research is not necessarily reflected in monetary terms.

Alberta Heritage Foundation for Medical Research (AHFMR)
1997/98 to 2001/02

FIGURE 7



Sources: University of Alberta: Research Grants Office; the University of Calgary: Financial Services; The University of Lethbridge: Financial Services.

- In the last five years AHFMR support to Alberta's universities has increased by 71 percent, to $49.7 million from the 1997/98 level of $29 million.
- The AHFMR has provided $194 million in sponsored research to Alberta's universities over the past five years.

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Commercialization of Research 2001/02

The University of Alberta and the University of Calgary generate funding through the activities of their respective technology transfer organizations, the Industry Liaison Office for the University of Alberta and University Technologies International Inc. for the University of Calgary. The impact of university research is reflected in the successes of these organizations through the growing number of licenses generating revenue, royalty revenues and spin-off companies. These successes give an indication of the impacts of university research as it is applied and transferred to industry and society.

The University of Alberta

With the help of the Industry Liaison Office, the University of Alberta had the following commercialization achievements in 2001/02:

- 63 reports of invention disclosed;
- 143 patent applications filed and 38 issued;
- 179 licenses, options or agreements signed;
- 9 spin-off companies formed;
- $2.1 million in licensing revenues received; and
- 25 new products or technologies licensed.

At the end of the 2001/02 fiscal year the University of Alberta held equity in 36 companies with an estimated value of $45.3 million. As of March 31, 2002 there were 63 active spin-off companies collectively employing more than 1,000 highly skilled workers. Eight companies are publicly traded with a market capitalization exceeding $1.1 billion.

Source: "Research Works", University of Alberta, Office of the VP Research, 2002

The University of Calgary

The University of Calgary's wholly owned technology transfer company, University Technologies International Inc. (UTI), continues to enable the University of Calgary to rank among the top Canadian universities generating royalty revenues from licensed technologies. In 2001/02, UTI received $2.5 million in licensing revenues.

In addition, UTI attracted $485,000 in Product Development Agreements to the University of Calgary and contributed $45,000 directly to post-graduate fellowships. It also made a one-time donation of $300,000 to the University of Calgary.

Also in 2001/02 UTI had:

- 33 deals executed;
- 85 disclosures of new technology;
- five start-up companies created, four from University of Calgary technologies;
- 130 licenses generating revenue from a portfolio of more than 350 patents; and
- 112 patent applications filed and 36 issued.

Through a formal letter of agreement between the University of Lethbridge and University Technologies International Inc., University of Lethbridge researchers are able to access UTI's technology commercialization services.

Source: UTI, University of Calgary

Research Revenue from Investment Earnings, Networks of Centres of Excellence and Clinical Trials 2001/02

Reporting Standards

- Alberta universities follow common approaches to most of their reporting. However, there are a number of reporting differences between universities, including investment earnings (primarily endowment) allocated to research expenditure, Networks of Centres of Excellence (NCE) revenue and clinical trials funding.

- Differing situations at the University of Alberta and the University of Calgary make reporting these three sources in the same manner particularly difficult. The explanatory notes and revenues recorded below have been included in this report to ensure that this report is as inclusive of all sponsored research revenue and to allow for a comparable overview of the significant revenues derived from these three sources at the University of Alberta and the University of Calgary.

The University of Alberta

Investment Income

- In 2001/02, investment earnings from endowments totaling $21,950,000 were allocated for research spending but are not included in the sponsored research revenue total.

Networks of Centres of Excellence (NCEs)

- University of Alberta researchers participate in 21 of the 22 federal Networks of Centres of Excellence. The 2001/02 sponsored research revenue total includes net University of Alberta revenue. The net NCE revenue in 2001/02 was $4.6 million. This amount is understated, as the Research Revenue Schedule in the University's Financial Statements does not break down any revenue received in amounts less than $50,000. These smaller amounts are included in the "Other" category of the Sponsored Research Revenue table (Table 1, page 15).

Clinical Trials

- Virtually all funds for clinical trials are received, held, and administered by the Capital Health Authority, with a small portion administered by the Alberta Cancer Board.

- Revenues for clinical trials reported by the Capital Health Authority and Alberta Cancer Board bring the total estimated clinical trials revenue for the University of Alberta to $20.7 million for 2001/02. This revenue is not included in the Sponsored Research Revenue table.

Investment Income

- In addition to the $171 million in sponsored research funding listed in table 1 (page 15), the University of Calgary allocated $11.3 million of investment income to research activities.

Networks of Centres of Excellence (NCEs)

- The University of Calgary is responsible for administering a Network of Centres of Excellence (NCE) that provides grants to researchers at universities across Canada. Funding for the NCE is provided by the Natural Sciences and Engineering Research Council (NSERC) and the Canadian Institutes of Health Research (CIHR).

- $1.4 million in funding received for the NCE is included in the sponsored research total.

Clinical Trials

- The University of Calgary has entered into an agreement with the Calgary Regional Health Authority with respect to the administration of industry sponsored, patient-based clinical research. Under this agreement, the researcher has the option of administering the financial resources of each individual clinical trial through the financial system of either the University or Regional Health Authority, regardless of the physical location of where the clinical trial is held. To date, the majority of these clinical trials are administered through the University's financial system.

- Total clinical trial revenue for 2001/02 is $11.3 million and is included as sponsored research revenue.

Table 1:

Sponsored Research Revenue
1999/00 to 2001/02

Sources		Recipient	1999/2000	2000/01	2001/02
Federal Gov't	NSERC	Alberta	31,374	35,600	37,590
		Calgary	17,832	16,614	18,246
		Lethbridge	1,407	1,804	1,705
		Athabasca	9	8	52
	SSHRC	Alberta	5,428	5,611	* 19,510
		Calgary	2,916	3,662	** 9,515
		Lethbridge	139	141	201
		Athabasca	71	41	175
	CIHR	Alberta	19,170	23,277	30,467
		Calgary	14,041	18,914	25,927
		Lethbridge	227	226	222
		Athabasca	0	0	52
	CFI	Alberta	8,133	5,696	22,133
		Calgary	6,378	2,510	4,164
		Lethbridge	150	0	218
		Athabasca	0	0	78
	OTHER	Alberta	6,418	12,597	13,030
		Calgary	4,908	4,573	6,308
		Lethbridge	220	359	373
		Athabasca	108	92	219
	Subtotal	Alberta	70,523	82,783	122,730
		Calgary	46,076	48,274	64,160
		Lethbridge	2,143	2,530	2,719
		Athabasca	189	140	576
		All	**118,931**	**131,727**	**190,185**
Alberta Gov't	AHFMR	Alberta	20,330	22,798	23,707
		Calgary	17,780	20,126	24,422
		Lethbridge	548	544	1,562
		Athabasca	0	0	0
	I&S and ASRA	Alberta	10,651	30,822	17,353
		Calgary	7,043	15,778	18,499
		Lethbridge	223	742	876
		Athabasca	130	263	114
	AIF	Alberta			177
		Calgary			99
		Lethbridge			0
		Athabasca			0
	OTHER	Alberta	16,958	12,279	*** 27,725
		Calgary	7,381	14,439	11,463
		Lethbridge	131	711	245
		Athabasca	0	0	103
	Subtotal	Alberta	56,493	65,899	68,962
		Calgary	34,437	50,344	54,483
		Lethbridge	902	1,997	2,683
		Athabasca	130	263	217
		All	**91,962**	**118,503**	**126,345**
Other Gov't		Alberta	6,435	9,717	13,733
		Calgary	1,071	1,911	2,138
		Lethbridge	88	66	107
		Athabasca	0	0	0
		All	**7,594**	**11,694**	**15,978**
Industry		Alberta	22,143	29,853	24,798
		Calgary	20,873	29,628	25,731
		Lethbridge	110	47	162
		Athabasca	4	4	4
		All	**43,130**	**59,532**	**50,695**
Non-Profit		Alberta	15,611	20,400	24,476
		Calgary	20,361	23,616	24,197
		Lethbridge	193	501	1,022
		Athabasca	0	0	28
		All	**36,165**	**44,517**	**49,723**
Other		Alberta	1,310	2,450	3,746
		Calgary	634	251	768
		Lethbridge	228	140	21
		Athabasca	0	0	0
		All	**2,172**	**2,841**	**4,535**
TOTAL Note: Totals may not add due to rounding		Alberta	172,515	211,102	258,445
		Calgary	123,452	152,023	171,478
		Lethbridge	3,664	5,281	6,714
		Athabasca	323	407	825
		All	**299,954**	**368,813**	**437,462**

* Includes $11,899,000 for indirect costs ** Includes $7,319,000 for indirect costs *** Includes $21,002,000 from Alberta Infrastructure

Sources: University of Alberta: Research Grants Office; the University of Calgary: Financial Services; The University of Lethbridge: Financial Services; Athabasca University: Office of the VP, Academic

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Table 2: Alberta Science and Research Investments Program 2001/02 *Phase 1 Awards

* Proposals for the 2001/2002 competition were approved by the Alberta Science and Research Authority in 2 phases. This list contains those proposals approved in phase 1, which was within the 2001/2002 fiscal year. Additional proposals were approved within the 2002/2003 fiscal year and will therefore be listed in next year's report as phase 2.

Life Sciences ***ASRIP Awards: $2,449,821*** *Total Project Costs:$6,904,143*

Chemistry and Biochemistry Research on Chemical Structures and Reaction Pathways (King's Univ. Col., Peter Mahaffy)
ASRIP Award: $200,000 Total Project Cost: $665,009

Spindle Position and Checkpoint Control During Mitosis (U of A, Neil Adames)
ASRIP Award: $212,088 Total Project Cost: $530,220

Research Into Disturbed Neuronal Respiratory Function (U of A, Klaus Ballanyi)
ASRIP Award: $518,620 Total Project Cost: $1,382,797

Laboratory for Perceptual Motor Behaviour in Down Syndrome and Other Special Populations (U of A, Brian Maraj)
ASRIP Award: $100,000 Total Project Cost: $391,000

Large Scale Tissue Culture and Bioreactor Facilities for Biomedical/Biochemical Engineering (U of C, Leo Behie)
ASRIP Award: $151,532 Total Project Cost $378,830

Cellular Mechanobiology and Surgical Simulation in Orthopedic Bioengineering (U of C, Neil Duncan)
ASRIP Award: $125,000 Total Project Cost: $428,897

Molecular and Cellular Biomechanics and Biomedical Engineering (U of C, Walter Herzog
ASRIP Award: $123,078 Total Project Cost: $315,586

Analysis of Gene Regulation and Function Using Transgenic Model Systems (U of C, Frank Jirik)
ASRIP Award: $127,100 Total Project Cost: $317,754

Medical Genetics Research Laboratory (U of C, Renee Martin)
ASRIP Award: $95,988 Total Project Cost: $313,572

Respiratory Research into Molecular Pathogenesis of Inflammatory Airway Diseases (U of C, David Proud
ASRIP Award: $125,000 Total Project Cost: $316,894

Studies on the Cause, Prevention and Cure of Type I Diabetes (U of C, Ji-Won Yoon)
ASRIP Award: $136,000 Total Project Cost: $340,000

Research on the Biochemistry, Molecular Biology, and Biotechnology of Plants (U of C, Peter Facchini)
ASRIP Award: $143,590 Total Project Cost: $372,589

Plant Molecular Biology Laboratory (U of L, Olga Kovalchuk)
ASRIP Award: $171,825 Total Project Cost: $430,995

Clinical Medical Imaging Research for Vascular Diagnosis and Intervention (U of C, Richard Fraye)
ASRIP Award: $220,000 Total Project Cost: $720,000

Energy ***ASRIP Awards: $678,342*** *Total Project Costs:$1,908,355*

Laboratory for Colloids and Complex Fluids (U of A, Subir Bhattacharee)
ASRIP Award: $125,000 Total Project Cost: $312,500

Energy and Imaging Research for Chemical and Petroleum Engineering (U of C, Apostolos Kantzas)
ASRIP Award: $175,000 Total Project Cost: $650,000

Thermal Science Facility (U of C, Abdulmajeed Mohamed)
ASRIP Award: $144,340 Total Project Cost: $360,850

Foothills Climate Array (U of C, Shawn Marshall)
ASRIP Award: $234,002 Total Project Cost: $585,005

Information and Communications Technology (ICT) ***ASRIP Awards: $515,705*** *Total Project Costs:$1,320,117*

High-capacity Digital Communications Lab (U of A, Christian Schlegel)
ASRIP Award: $125 000 Total Project Cost: $312,500

Centre for Symbolic Computation (U of A, Andrzej Czarnecki)
ASRIP Award: $133,835 Total Project Cost: $347,475

RHODIUM, A Pentium Computer Ranch Catalyst Design and Chemical Modeling (U of C, Tom Ziegler)
ASRIP Award: $125,000 Total Project Cost: $312,500

High-Performance Real-Time Digital Signal Image and Video Processing Laboratory (U of C, Wael Badawy)
ASRIP Award: $131,870 Total Project Cost: 347,642

Other Areas ***ASRIP Awards: $452,153*** *Total Project Costs: $1,216,947*

Core Facility for Spatial Applications of Social Ecology (U of A, Debra Davidson)
ASRIP Award: $173,240 Total Project Cost: $505,400

Electromagnetic Instrumentation for Subsurface Imaging of the Continents (U of A, Martyn Unsworth)
ASRIP Award: $118,423 Total Project Cost: $296,057

The Experimental Economics Laboratory (U of C, Robert Oxoby)
ASRIP Award: $160,490 Total Project Cost $415,490

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